

LEWIN et al.
Appl. No. 10/534,494
June 17, 2008

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes new Figure 6.

REMARKS/ARGUMENTS

Claims 1-9 and 11-15 stand rejected in the outstanding Official Action. Applicants have made no claim amendments and therefore claims 1-9 and 11-15 remain in this application.

The drawings now stand objected to as failing to show every feature of the invention specified in the claims. The Examiner suggests that the array of LEDs (apparently a reference to claim 15) and “the illumination means adapted to project a plurality of spots at different modulated frequencies and the mask adapted such that at each range of distance a different modulated frequency is transmitted to the detector” (apparently a reference to claim 8) are not illustrated in the drawings. The above amendments and the newly submitted drawing of Figure 6 is based upon the assumption that the Examiner is referring to claims 15 and 8. Should the Examiner have intended a reference to a different claim or structure shown in a different claim, he is respectfully requested to identify the claim and structure to which the drawing objections are addressed.

Applicants have included newly prepared Figure 6 and have amended the specification disclosures accordingly. For example, on page 5, in the Brief Description of the Drawings, there is now a reference to Figure 6 illustrating a light source comprised of a plurality of LEDs. Figure 6 is discussed on page 7 in the inserted line. The aspect of claim 8 is now literally supported by Applicants’ specification on page 11, lines 31-34 as amended referencing newly submitted Figure 6.

Entry of the above amendments to the specification and newly drawn Figure 6 is believed to obviate any further rejection based upon inadequate drawings. Again, should the Examiner have more detailed comments with respect to structure in a particular claim which is not

illustrated, he is respectfully requested to identify such structure to Applicants in any subsequent response.

Claims 1-3, 7, 9 and 13 stand rejected under 35 USC §102 as being anticipated by Heisner (U.S. Patent 3,786,238). The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim."

Applicants' independent claim and claims 2-9 and 11-15 dependent thereon all specifically require an illumination means comprising a light source, a light guide and projection optics combined so as to project "an array of distinct images of the light source towards the scene." The Examiner contends that, in addition to the detector, mask and illumination means (comprising light source, light guide and projection optics), are all disclosed in the Heisner reference and combined in the manner specified in the claim. This contention is respectfully traversed.

There is no disclosure of Applicants' claimed "illumination means" contained in the Heisner reference. While the Examiner suggests that Heisner teaches a light source, there is no contention that he teaches Applicants' claimed "illumination means" which comprises the three recited elements of a "light source," a "light guide comprising a tube having substantially reflective sides" and "projection optics," let alone their combination in a manner so as to "project an array of distinct images of the light source towards the scene." Remember, the use of the word "means" is a presumptive resort to "means plus function" format. Either the claim language has to be construed to cover the corresponding structure disclosed in the specification

(and equivalents) if it is in “means” form or the specifically recited structure in the claim and its claimed interrelationships must be shown in the prior art, if it is not in “means” form.

The Examiner correctly notes that Heisner teaches a light source and that this source is utilized to illuminate the input faces of a plurality of light guides. However, there is no disclosure of Applicants’ claimed light guide “comprising a tube.” Moreover, there is no disclosure of any tube “having substantially reflective sides.” Furthermore, while the array 24 is comprised of “fiber optic tubes,” there is no indication that these tubes have “substantially reflective sides” or are arranged in combination with “projection optics.”

The Examiner is respectfully requested to identify any portion of the Heisner reference which allegedly teaches a light guide comprising a tube having substantially reflective sides and projection optics and with these elements in combination so as to “project an array of distinct images of the light source towards the scene.” None of these claimed structures and the claimed structural interrelationships are believed present in the Heisner reference.

Thus, while Heisner may teach something which illuminates something else, it does not meet the requirements of Applicants’ specifically claimed “illumination means” which, in means-plus-function format, encompasses the corresponding structures in Applicants’ specification and equivalents thereof, i.e., a light source, a light guide and projection optics, all of which must be combined to project “an array of distinct images.” There is no such claimed “illumination means” disclosed in the Heisner reference.

The Heisner reference also fails to teach Applicants’ claimed “mask” which is “located in the optical path of light from the scene to the detector.” Applicants’ independent claim 1 defines the mask as having “transmissive portions and non-transmissive portions” and being arranged

with the illumination means and the detector such that light “reflected from a target from within a first range of distances from the sensor is transmitted through the mask to the detector and light from a second range of distances is not transmitted through the mask.” Thus, Applicants’ independent claim requires the mask to be located in a specific position.

The Examiner does not identify any structure in Heisner which those of ordinary skill in the art would consider a “mask” as defined in the claim. Moreover, there is no disclosure in Heisner of the interrelationship between the “mask” and the detector so as to have the mask located between the scene and the detector. Should the Examiner contend that Heisner teaches a mask or that this mask is located in the optical path of light from “the scene to the detector,” he is respectfully requested to identify those specific structures and structural interrelationships in the Heisner patent.

Finally, the Examiner fails to indicate how or where Heisner contains any disclosure that the “illumination means” and the “detector” as required in claim 1 are arranged “such that light reflected from a target from within a first range of distances from the sensor is transmitted through the mask to the detector and light from a second range of distances is not transmitted through the mask.” This is a specific interrelationship of the claimed elements in Applicants’ claim 1 which is also clearly missing from the Heisner reference.

Heisner discloses a single light source illuminating input faces of an array of optical fibers and each fiber projects a single spot of light towards a scene. There is nothing in Heisner which suggests that the individual fibers comprise Applicants’ claimed light guide or that the individual fibers in combination with projection optics can project any “distinct image” of the light source towards the scene. At best, the light emitted by any one of the optical fibers in

Heisner will project a single spot of light, but that light will not be a “distinct image of the light source.” At best, each of the light tubes in Heisner project only a single spot of light towards the scene, whereas Applicants’ claimed illumination means and the recited light guide comprises a tube which is arranged with projection optics so as to project “an array” of distinct images, i.e., more than one spot.

In accordance with the above, the Heisner reference fails to teach Applicants’ claimed “illumination means” with its specifically claimed “light guide” and “projection optics” and the interrelationship so as to project “an array of distinct images of the light source towards the scene.” Additionally, Heisner fails to teach the claimed “mask” and its claimed location. Finally, Heisner fails to teach the combination of the claimed illumination means, detector and mask such that “light reflected from a target from within a first range of distances from the sensor is transmitted through the mask to the detector and light from a second range of distances is not transmitted through the mask” which is a specific interrelationship of the parts.

Thus, Heisner, contrary to the requirements of the Federal Circuit as noted in the *Lindemann* case above, clearly does not teach all of the claimed structures and all of the claimed interrelationships set out in Applicants’ independent claim 1 or any claim dependent thereon. Accordingly, there is no basis for the rejection under 35 USC §102 and any further rejection thereunder is respectfully traversed.

Claims 4, 5, 8, 11, 12, 14 and 15 stand variously rejected as being obvious under 35 USC §103 over Heisner in view of the secondary references of Geary (U.S. Patent 4,020,327), Shi (U.S. Patent 6,949,758), Hajduk (U.S. Patent 6,732,574), Li (U.S. Patent 6,926,435) or Nothofer (U.S. Patent 5,878,180). Because all of these obviousness rejections are based upon the primary

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reference to Heisner and the Examiner has committed reversible error with respect to what is and is not taught in the Heisner reference, the above comments distinguishing independent claim 1 from the Heisner reference are herein incorporated by reference.

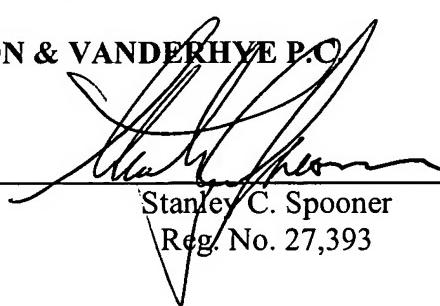
The Examiner in each of sections 5-15 of the Official Action makes no allegation that the above-noted missing structures and interrelationships required by independent claim 1 are disclosed in any of the secondary references. Thus, even if each of the combinations of the primary and secondary references were made as suggested by the Examiner, there would be no disclosure of the subject matter of claim 1 or any claim dependent thereon. Therefore, any further rejection of claims 4, 5, 8, 11, 12, 14 and 15 is respectfully traversed.

Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1-9 and 11-15 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact applicant's undersigned representative.

Respectfully submitted,

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